



**City of Philadelphia
Department of Public Health
Air Management Services**

PLAN APPROVAL

Approval No: 08080

Amendment Date: November 2, 2010

Plant ID: 01501

Owner: Sunoco, Inc. (R&M)
Address: 3144 Passyunk Ave.
Philadelphia, PA 19145

Source: Sunoco, Inc. (R&M) (Sunoco)
Location: 3144 Passyunk Ave.
Philadelphia, PA 19145

Attention: Glenn Tashjian

Pursuant to the provisions of Title 3 of the Philadelphia Code, the Air Management Code of February 17, 1995, as amended, and after due consideration of an application received under the rules and regulations of the Philadelphia Air Pollution Control Board, the City of Philadelphia, Department of Public Health, Air Management Services (AMS) on November 2, 2010 approved plans for the modification of the air contamination source(s) described below:

This permit modifies AMS Plan Approval 08080 dated September 9, 2008 to permanently shutdown of Boiler 38 of No. 3 Boilerhouse as an alternative compliance method to the Consent Decree 05-CV-2866, with no changes to permit conditions or emission limits of the No. 3 Boilerhouse as permitted in the original Plan Approval

"Replace the existing burners on Boiler Nos. 37, 38, 39, and 40 in the No. 3 Boiler House with Current Generation Ultra Low NOx Burners that burn refinery fuel gas (RFG) and acid soluble oil (ASO) with line wash material. Sunoco shall also install Flue Gas Recirculation and replace the air pre-heaters with economizers on each boiler. The burners shall meet the definition of Current Generation Ultra Low NOx Burners in Consent Decree Order 05-CV-2866. Nitrogen Oxide (NOx) emission reductions will be applied to the overall NOx Reduction Plan required by this Consent Decree Order [AMS Plan Approval 08080 dated September 9, 2008]"

This plan approval expires on May 2, 2012. If construction has not been completed by this date, an application for either an extension or a new plan approval must be made. The conditions in this plan approval will remain in effect until they are incorporated in an operating permit.

The sources covered by this plan approval are subject to the conditions prescribed in the attachment.

Edward Wiener
Chief of Source Registration
(215) 685-9426

PLAN APPROVAL CONDITIONS
PLAN APPROVAL NO. 08080
COMPANY: SUNOCO, INC. (R&M)

1. The No. 3 Boiler House and associated equipment shall be operated in accordance with the specifications in the application (as approved herein).
2. NOx emissions from the No. 3 Boiler House shall not exceed 0.040 lbs/MMBTU on a rolling 365-day basis. [Application and Consent Decree Order 05-CV-2866]
3. Particulate matter emissions from each boiler shall not exceed 0.10 lbs/MMBTU gross heat input. [AMR II. Section V.2]
4. Sulfur Dioxide (SO₂) emissions from each boiler shall not exceed 0.53 lbs/MMBTU at any time or 0.33 lbs/MMBTU on a rolling 365-day average. [SO₂ Operating Permit No. SO₂-95-039]
5. Carbon Monoxide (CO) emissions from each boiler shall not exceed 1% by volume of exhaust gases. [AMR VIII, Section II]
6. Emissions from the No. 3 Boiler House shall not exceed the following in any rolling 12-month period. [Application – NOx limit assures compliance with AMS Plan Approval No. 04322 dated 2/28/06]
 - (a) 253.7 tons of NOx
 - (b) 152.5 tons of SO₂
 - (c) 416.8 tons of CO
 - (d) 50.6 tons of PM/PM₁₀
 - (e) 34.0 tons of VOC
7. Each boiler shall comply with the NOx Budget Trading Program requirements of 25 PA Code Sections 145.1-145.90.
8. Sunoco may not permit the emission into the outdoor atmosphere of visible air contaminants in such a manner that the opacity of the emission is either of the following:
 - (a) Equal to or greater than 20% for a period or periods aggregating more than three (3) minutes in any one hour.
 - (b) Equal to or greater than 60% at any time.
9. Beginning December 31, 2010, each boiler shall burn only refinery fuel gas and acid soluble oil (including cutter and line flush material), except that fuel oil burning will be allowed during periods of natural gas curtailment, test runs, and operator training. Prior to December 31, 2010, each boiler may also burn non-commercial No. 6 oil.
10. The boilers shall be installed, maintained, and operated in accordance with manufacturer's specifications.
11. Total heat input to the No. 3 Boiler House shall not exceed 12,685,000 MMBTU per year (HHV) on a rolling 365-day basis.
12. Total combustion of ASO at the No. 3 Boiler House shall not exceed 8.92 barrels per day on a rolling 365-day basis. Total combustion of ASO system line wash material at the No. 3 Boiler House shall not exceed 35.7 barrels per day on a rolling 365-day basis.
13. Since the No. 3 Boiler House allowable NOx emission rate in lbs/MMBTU is now lower than that of the 22 Boiler House, there is no longer a restriction to the base rate of steam transfer through the cross facility emergency steam transfer line originating from the No. 3 Boiler House.
14. Beginning December 31, 2010, the #3 Boiler House must comply with the requirements of 40 CFR 60 Subpart J. [Consent Decree Order 05-CV-2866]
15. The hourly heat input to Boiler Nos. 37, 38, and 39 shall be capped at 495 MMBTU/hr for each boiler. The

PLAN APPROVAL CONDITIONS
PLAN APPROVAL NO. 08080
COMPANY: SUNOCO, INC. (R&M)

hourly heat input to Boiler No. 40 shall be capped at 660 MMBTU/hr. [Case-by-case RACT, 25 PA Code Sections 129.91-95]

- (a) Boiler 38 shall be permanently shutdown as an alternate compliance method per Consent Decree No. 05-CV-2866 no later than June 15, 2010.
16. Fugitive components at the No. 3 Boiler House shall comply with the requirements of 25 PA Code Section 129.58. New fugitive components added outside of the No. 3 Boiler House shall comply with the requirements of 40 CFR 60 Subpart GGG (references 40 CFR 60 Subpart VV).
17. The No. 3 Boiler House shall be equipped with continuous monitors and recorders for NO_x and O₂. The continuous monitors and recorders shall meet the requirements of 25 PA Code Chapter 139.
18. Beginning December 31, 2010, Sunoco shall monitor and record the concentration of Hydrogen Sulfide in the refinery fuel gas to No. 3 Boiler House with a continuous monitoring and recording system. The monitoring system shall meet the requirements of 25 PA Code Chapter 139 and 40 CFR 60.105(a)(4). Prior to December 31, 2010, Sunoco shall test the sulfur content of refinery fuel gas burned on a daily basis. [40 CFR 60 Subpart J for monitor, SO₂ Operating Permit No. SO₂-95-039 for testing].
19. Sunoco shall monitor the fuel type and fuel usage on a daily basis to ensure the capacity limits in Condition 15 are not exceeded. Sunoco shall demonstrate compliance with Condition 4 by monitoring the sulfur content of fuel burned. [Case-by-case RACT, 25 PA Code Sections 129.91-95 & SO₂ Operating Permit No. SO₂-95-039]
20. Sunoco shall monitor all fuel input to each boiler on a daily basis to ensure the capacity limits in Condition 15 are not exceeded. [Case-by-case RACT, 25 PA Code Sections 129.91-95]
21. Sunoco shall keep the following records for the boilers:
- a. Daily fuel type, fuel usage, and refinery fuel gas heating value for each boiler.
 - b. No. 3 Boiler House rolling 12-month emissions on a monthly basis to demonstrate compliance with Condition 6. NO_x emissions shall be determined based on CEM data. Other emissions shall be determined based on AMS-approved stack test data, AP-42 emissions factors, or other AMS-approved emission factors.
 - c. Total heat input to the No. 3 Boiler House in MMBTU per year (HHV) on a rolling 365-day basis.
 - d. Total combustion of ASO and ASO system line wash material at the No. 3 Boiler House in barrels per day on a rolling 365-day basis.
 - e. Prior to December 31, 2010, daily sulfur content of refinery fuel gas burned.

These records shall be kept for a minimum of 5 years and produced upon request by AMS.